

SEQUENCE LISTING

<110> Cahoon, Edgar B.
Kinney, Anthony J.
Cahoon, Rebecca E.

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 35 40 45
 Pro Ser Asp Asp Val Gly Ala Pro Ala Asp Val Arg Asp Arg Ile Asp
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 Ser Val Val Asn Asp Asp Ala Gln Gly Thr Ala Asn Leu Ala Gly Asp
 65 70 75 80
 Asn Asn Gly Gly Gly Asp Asn Asn Gly Gly Gly Arg Gly Gly Gly Glu
 85 90 95
 Gly Arg Gly Asn Ala Asp Ala Thr Phe Thr Tyr Arg Pro Ser Val Pro
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 Ala His Arg Arg Ala Arg Glu Ser Pro Leu Ser Ser Asp Ala Ile Phe
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 Lys Gln Ser His Ala Gly Leu Phe Asn Leu Cys Val Val Val Leu Ile
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 Ala Val Asn Ser Arg Leu Ile Ile Glu Asn Leu Met Lys Tyr Gly Trp
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 165 170 175
 Pro Leu Phe Met Cys Trp Ile Ser Leu Ser Ile Phe Pro Leu Ala Ala
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 Gly Ile Phe Leu His Ile Ile Ile Thr Met Thr Glu Val Leu Tyr Pro
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 His Thr Ser Tyr Asp Ile Arg Ser Leu Ala Asn Ala Ala Asp Lys Ala
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 Asn Pro Glu Val Ser Tyr Tyr Val Ser Leu Lys Ser Leu Ala Tyr Phe
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Met Val Ala Pro Thr Leu Cys Tyr Gln Pro Ser Tyr Pro Arg Ser Ala
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 Cys Ile Arg Lys Gly Trp Val Ala Arg Gln Phe Ala Lys Leu Val Ile
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 405 410 415
 Met Val Arg His Ile Tyr Phe Pro Cys Leu Arg Ser Lys Ile Pro Lys
 420 425 430
 Thr Leu Ala Ile Ile Ile Ala Phe Leu Val Ser Ala Val Phe His Glu
 435 440 445
 Leu Cys Ile Ala Val Pro Cys Arg Leu Phe Lys Leu Trp Ala Phe Leu
 450 455 460
 Gly Ile Met Phe Gln Val Pro Leu Val Phe Ile Thr Asn Tyr Leu Gln
 465 470 475 480
 Glu Arg Phe Gly Ser Thr Val Gly Asn Met Ile Phe Trp Phe Ile Phe
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<212> DNA

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<213> Zea mays

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Phe Asn Asn Leu Val Ser Asp Pro Ala Thr Thr Cys Phe His Ile Leu
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Phe Thr Thr Phe Glu Ile Val Tyr Pro Val Leu Val Ile Leu Lys Cys
      50              55              60

Asp Ser Ala Val Leu Ser Gly Phe Val Leu Met Phe Ile Ala Cys Ile
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Val Trp Leu Lys Leu Val Ser Phe Ala His Thr Asn His Asp Ile Gly
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Lys Leu Ile Thr Ser Gly Lys Lys Val Asp Asn Glu Leu Thr Ala Ala
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Gly Ile Asp Asn Leu Gln Xaa Pro Thr Leu Gly Ser Leu Thr Tyr Phe
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Lys Met Ala Pro Thr Leu Cys Tyr Gln Ala Lys Val Ile Leu Arg Thr
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Pro Tyr Val Arg Lys Gly Trp Leu Val Arg Gln Val Ile Leu Tyr Leu
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Ile Val Val Asn Ser Gln His Pro Leu Met Gly Gly Leu Leu Asn Ala
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Val Glu Thr Val Leu Lys Leu Ser Leu Pro Asn Val Tyr Leu Trp Leu
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Cys Met Phe Tyr Cys Leu Phe His Leu Trp Leu Asn Ile Leu Ala Glu
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 Lys Thr Ile Asp Glu Tyr Trp Arg Lys Trp Asn Met Pro Val His Lys
 245 250 255
 Trp Ile Val Arg His Ile Tyr Phe Pro Cys Met Arg Asn Gly Ile Ser
 260 265 270
 Lys Glu Val Ala Val Phe Ile Ser Phe Phe Val Ser Ala Val Leu His
 275 280 285
 Glu Tyr Val Leu Leu Phe Leu His Ile Leu Lys Phe Trp Ala Phe Leu
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 Gly Ile Met Leu Gln Ile Pro Leu Ile Ile Leu Thr Ser Tyr Leu Lys
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 Asn Lys Phe Ser Asp Thr Met Val Gly Asn Met Ile Phe Trp Phe Phe
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 Ile Val Val Asn Ser Gln His Pro Leu Met Gly Gly Leu Leu Asn Ala
 35 40 45
 Val Glu Thr Val Leu Lys Leu Ser Leu Pro Asn Val Tyr Leu Trp Leu
 50 55 60
 Cys Met Phe Tyr Cys Leu Phe His Leu Trp Leu Asn Ile Leu Ala Glu
 65 70 75 80
 Ile Leu Arg Phe Gly Asp Arg Glu Phe Tyr Lys Asp Trp Trp Asn Ala
 85 90 95
 Lys Thr Ile Asp Glu Tyr Trp Arg Lys Trp Asn Met Pro Val His Lys
 100 105 110
 Trp Ile Val Arg His Ile Tyr Phe Pro Cys Met Arg Asn Gly Ile Ser
 115 120 125
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Leu Ala Phe Asn Asn Leu Val Ser Asp Pro Ala Thr Thr Cys Phe His
 35 40 45

Ile Leu Phe Thr Thr Phe Glu Ile Val Tyr Pro Val Leu Val Ile Leu
 50 55 60

Lys Cys Asp Ser Ala Val Leu Ser Gly Phe Val Leu Met Phe Ile Ala
 65 70 75 80

Cys Ile Val Trp Leu Lys Leu Val Ser Phe Ala His Thr Asn His Asp
 85 90 95

Ile Arg Lys Leu Ile Thr Ser Gly Lys Lys Val Asp Asn Glu Leu Thr
 100 105 110

Ala Ala Gly Ile Asp Asn Leu Gln Ala Pro Thr Leu Gly Ser Leu Thr
 115 120 125

Tyr Phe Met Met Ala Pro Thr Leu Cys Tyr Gln Pro Ser Tyr Pro Arg
 130 135 140

Thr Pro Tyr Val Arg Lys Gly Trp Leu Val Arg Gln Val Ile Leu Tyr
 145 150 155 160

Leu Ile Phe Thr Gly Leu Gln Gly Phe Ile Ile Glu Gln Tyr Ile Asn
 165 170 175

Pro Ile Val Val Asn Ser Gln His Pro Leu Met Gly Gly Leu Leu Asn
 180 185 190

Ala Val Glu Thr Val Leu Lys Leu Ser Leu Pro Asn Val Tyr Leu Trp
 195 200 205

Leu Cys Met Phe Tyr Cys Leu Phe His Leu Trp Leu Asn Ile Leu Ala
 210 215 220

Glu Ile Leu Arg Phe Gly Asp Arg Glu Phe Tyr Lys Asp Trp Trp Asn

225 230 235 240
 Ala Lys Thr Ile Asp Glu Tyr Trp Arg Lys Trp Asn Met Pro Val His
 245 250 255
 Lys Trp Ile Val Arg His Ile Tyr Phe Pro Cys Met Arg Asn Gly Ile
 260 265 270
 Ser Lys Glu Val Ala Val Phe Ile Ser Phe Phe Val Ser Ala Val Leu
 275 280 285
 His Glu Val Thr Tyr Leu Leu Phe His Ser Ser Ser Ala Tyr Ile Asn
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901

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Tyr Gly Asn Tyr Val Asp Pro Glu Asn Met Lys Asp Pro Thr Phe Lys
 35 40 45

Ser Leu Val Tyr Phe Met Leu Ala Pro Thr Leu Cys Tyr Gln Pro Thr
 50 55 60

Tyr Pro Gln Thr Thr Cys Ile Arg Lys Gly Trp Val Thr Gln Gln Leu
 65 70 75 80

Ile Lys Cys Val Val Phe Thr Gly Leu Met Gly Phe Ile Ile Glu Gln
 85 90 95

Tyr Ile Asn Pro Ile Val Lys Asn Ser Lys His Pro Leu Lys Gly Asn
 100 105 110

Phe Leu Asn Ala Ile Glu Arg Val Leu Lys Leu Ser Val Pro Thr Leu
 115 120 125

Tyr Val Trp Leu Cys Met Phe Tyr Cys Phe Phe His Leu Trp Leu Asn
 130 135 140

Ile Val Ala Xaa Leu Leu Cys Phe Gly Asp Arg Glu Phe Tyr Lys Asp

145 150 155 160
 Trp Trp Asn Xaa Lys Thr Val Glu Glu Tyr Trp Arg Met Trp Asn Met
 165 170 175
 Pro Val His Lys Trp Ile Ile Arg His Ile Tyr Phe Pro Cys Ile Arg
 180 185 190
 Xaa Gly Phe Ser Arg Gly Val Ala Ile Leu Ile Ser Phe Leu Val Ser
 195 200 205
 Ala Val Phe His Glu Ile Cys Ile Ala Val Pro Cys His Ile Phe Lys
 210 215 220
 Phe Trp Ala Phe Ser Gly Ile Met Phe Gln Ile Pro Leu Val Phe Leu
 225 230 235 240
 Thr Arg Tyr Leu His Ala Thr Phe Lys His Val Met Val Gly Asn Met
 245 250 255
 Ile Phe Trp Phe Phe Ser Ile Val Arg Gln Pro Met Xaa Cys Leu Tyr
 260 265 270
 Asn Xaa His Asp Val Met Lys Gln Ala Arg Pro Ser Lys
 275 280 285

<210> 11
 <211> 254
 <212> DNA
 <213> Oryza sativa

<400> 11
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 tttcaaccta tgcattgttg ttctagttgc agtgaacagc aggcttatta tcgagaactt 180
 aatgaagtat ggcttattaa taagagctgg gttttggttt aatgataaat cattgcggga 240
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<210> 12
 <211> 80
 <212> PRT
 <213> Oryza sativa

<400> 12
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 Phe Lys Gln Ser His Ala Gly Leu Phe Asn Leu Cys Ile Val Val Leu
 35 40 45
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 50 55 60
 Leu Leu Ile Arg Ala Gly Phe Trp Phe Asn Asp Lys Ser Leu Arg Asp
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<210> 13
 <211> 1587

<212> DNA
 <213> *Oryza sativa*

<400> 13

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<210> 14
 <211> 500
 <212> PRT
 <213> *Oryza sativa*

<400> 14

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  20          25          30

Asp Glu Ala Ala Pro Gly Ser Pro Arg Pro Arg Pro Arg Pro Arg
  35          40          45

Pro Arg Gly Gly Asp Ser Asn Gly Arg Ser Val Leu Arg Pro Gly Gly
  50          55          60

Gly Gly Gly Arg Gly Gly Gly Gly Asp Phe Ser Ala Phe Thr Phe Arg
  65          70          75          80

Ala Ala Ala Pro Val His Arg Lys Ala Lys Glu Ser Pro Leu Ser Ser
  85          90          95

Asp Ala Ile Phe Lys Gln Ser His Ala Gly Leu Phe Asn Leu Cys Ile
  100         105         110

Val Val Leu Val Ala Val Asn Ser Arg Leu Ile Ile Glu Asn Leu Met
  115         120         125
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Lys Tyr Gly Leu Leu Ile Arg Ala Gly Phe Trp Phe Asn Asp Lys Ser
 130 135 140
 Leu Arg Asp Trp Pro Leu Leu Met Cys Cys Leu Ser Leu Pro Ala Phe
 145 150 155 160
 Pro Leu Gly Ala Phe Ala Val Glu Lys Leu Ala Phe Asn Asn Val Ile
 165 170 175
 Thr Asp Ala Val Ala Thr Cys Leu His Ile Phe Leu Ser Thr Thr Glu
 180 185 190
 Ile Val Tyr Pro Val Leu Val Ile Leu Lys Cys Asp Ser Ala Val Leu
 195 200 205
 Ser Gly Phe Leu Leu Ile Phe Ile Ala Cys Ile Val Trp Leu Lys Leu
 210 215 220
 Val Ser Phe Ala His Thr Asn His Asp Ile Arg Gln Leu Thr Met Gly
 225 230 235 240
 Gly Lys Lys Val Asp Asn Glu Leu Ser Thr Val Asp Met Asp Asn Leu
 245 250 255
 Gln Pro Pro Thr Leu Gly Asn Leu Ile Tyr Phe Met Met Ala Pro Thr
 260 265 270
 Leu Cys Tyr Gln Pro Ser Tyr Pro Arg Thr Ser Cys Val Arg Lys Gly
 275 280 285
 Trp Leu Ile Arg Gln Ile Ile Leu Tyr Leu Ile Phe Thr Gly Leu Gln
 290 295 300
 Gly Phe Ile Ile Glu Gln Tyr Ile Asn Pro Ile Val Val Asn Ser Gln
 305 310 315 320
 His Pro Leu Lys Gly Gly Leu Leu Asn Ala Val Glu Thr Val Leu Lys
 325 330 335
 Leu Ser Leu Pro Asn Val Tyr Leu Trp Leu Cys Met Phe Tyr Ala Phe
 340 345 350
 Phe His Leu Trp Leu Ser Ile Leu Ala Glu Ile Leu Arg Phe Gly Asp
 355 360 365
 Arg Glu Phe Tyr Lys Asp Trp Trp Asn Ala Lys Thr Ile Asp Glu Tyr
 370 375 380
 Trp Arg Lys Trp Asn Met Pro Val His Lys Trp Val Val Arg His Ile
 385 390 395 400
 Tyr Phe Pro Cys Met Arg Asn Gly Ile Ser Lys Glu Val Ala Val Leu
 405 410 415
 Ile Ser Phe Leu Val Ser Ala Val Leu His Glu Ile Cys Val Ala Val
 420 425 430
 Pro Cys Arg Ile Leu Lys Phe Trp Ala Phe Leu Gly Ile Met Leu Gln
 435 440 445

Ile Pro Leu Ile Val Leu Thr Ala Tyr Leu Lys Ser Lys Phe Arg Asp
 450 455 460

Thr Met Val Gly Asn Met Ile Phe Trp Phe Phe Cys Ile Tyr Gly
 465 470 475 480

Gln Pro Met Cys Leu Leu Leu Tyr Tyr His Asp Val Met Asn Arg Ile
 485 490 495

Glu Lys Ala Arg
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<210> 15
 <211> 1942
 <212> DNA
 <213> Glycine max

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 aaaaaaaaaa aaaaaaaaaa aa 1942

<210> 16
 <211> 504
 <212> PRT
 <213> Glycine max

<400> 16
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 20 25 30
 Asn Ser Pro Glu Thr Thr Thr Asp Ser Ser Gly Asp Asp Leu Ala Lys
 35 40 45
 Asp Ser Gly Ser Asp Asp Ser Ile Asn Ser Asp Asp Ala Ala Val Asn
 50 55 60
 Ser Gln Gln Gln Asn Glu Lys Gln Asp Thr Asp Phe Ser Val Leu Lys
 65 70 75 80
 Phe Ala Tyr Arg Pro Ser Val Pro Ala His Arg Lys Val Lys Glu Ser
 85 90 95
 Pro Leu Ser Ser Asp Thr Ile Phe Arg Gln Ser His Ala Gly Leu Phe
 100 105 110
 Asn Leu Cys Ile Val Val Leu Val Ala Val Asn Ser Arg Leu Ile Ile
 115 120 125
 Glu Asn Leu Met Lys Tyr Gly Trp Leu Ile Lys Ser Gly Phe Trp Phe
 130 135 140
 Ser Ser Lys Ser Leu Arg Asp Trp Pro Leu Phe Met Cys Cys Leu Ser
 145 150 155 160
 Leu Val Val Phe Pro Phe Ala Ala Phe Ile Val Glu Lys Leu Ala Gln
 165 170 175
 Arg Lys Cys Ile Pro Glu Pro Val Val Val Val Leu His Ile Ile Ile
 180 185 190
 Thr Ser Thr Ser Leu Phe Tyr Pro Val Leu Val Ile Leu Arg Cys Asp
 195 200 205
 Ser Ala Phe Val Ser Gly Val Thr Leu Met Leu Phe Ser Cys Val Val
 210 215 220
 Trp Leu Lys Leu Val Ser Tyr Ala His Thr Asn Tyr Asp Met Arg Ala
 225 230 235 240
 Leu Thr Lys Leu Val Glu Lys Gly Glu Ala Leu Leu Asp Thr Leu Asn
 245 250 255
 Met Asp Tyr Pro Tyr Asn Val Ser Phe Lys Ser Leu Ala Tyr Phe Leu
 260 265 270
 Val Ala Pro Thr Leu Cys Tyr Gln Pro Ser Tyr Pro Arg Thr Pro Tyr
 275 280 285
 Ile Arg Lys Gly Trp Leu Phe Arg Gln Leu Val Lys Leu Ile Ile Phe
 290 295 300
 Thr Gly Val Met Gly Phe Ile Ile Asp Gln Tyr Ile Asn Pro Ile Val
 305 310 315 320
 Gln Asn Ser Gln His Pro Leu Lys Gly Asn Leu Leu Tyr Ala Thr Glu
 325 330 335
 Arg Val Leu Lys Leu Ser Val Pro Asn Leu Tyr Val Trp Leu Cys Met

340

345

350

Phe Tyr Cys Phe Phe His Leu Trp Leu Asn Ile Leu Ala Glu Leu Leu
 355 360 365

Arg Phe Gly Asp Arg Glu Phe Tyr Lys Asp Trp Trp Asn Ala Lys Thr
 370 375 380

Val Glu Asp Tyr Trp Arg Met Trp Asn Met Pro Val His Lys Trp Met
 385 390 395 400

Ile Arg His Leu Tyr Phe Pro Cys Leu Arg His Gly Leu Pro Lys Ala
 405 410 415

Ala Ala Leu Leu Ile Ala Phe Leu Val Ser Ala Leu Phe His Glu Leu
 420 425 430

Cys Ile Ala Val Pro Cys His Ile Phe Lys Leu Trp Ala Phe Gly Gly
 435 440 445

Ile Met Phe Gln Val Pro Leu Val Leu Ile Thr Asn Tyr Leu Gln Asn
 450 455 460

Lys Phe Arg Asn Ser Met Val Gly Asn Met Ile Phe Trp Phe Ile Phe
 465 470 475 480

Ser Ile Leu Gly Gln Pro Met Cys Val Leu Leu Tyr Tyr His Asp Leu
 485 490 495

Met Asn Arg Lys Gly Lys Leu Asp
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<210> 17

<211> 470

<212> DNA

<213> Glycine max

<220>

<221> unsure

<222> (372)

<223> n = a, c, g, or t

<220>

<221> unsure

<222> (424)

<223> n = a, c, g, or t

<220>

<221> unsure

<222> (442)

<223> n = a, c, g, or t

<220>

<221> unsure

<222> (446)

<223> n = a, c, g, or t

<220>

<221> unsure

<222> (469)

<223> n = a, c, g, or t

<400> 17

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cgcccagac gaccaccgac agttccgggtg atgacttggc caaggattcc ggttccgacg 180
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ccgtcctcaa attcgcttac cgtccttcgc tccccgctca tcgcaaagtg aaggaaagtc 300
cgctcagctc ccgacaccat tttccgtcag aagtcacgcg gggcctcttc aacctcctgt 360
atagtaagtc cntgttgctg tgaataagcc gactcatcat tgagaatttt aaatgaaata 420
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<210> 18

<211> 38

<212> PRT

<213> Glycine max

<400> 18

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Asp Phe Ser Val Leu Lys Phe Ala Tyr Arg Pro Ser Val Pro Ala His
  1             5             10             15

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Arg Lys Val Lys Glu Ser Pro Leu Ser Ser Asp Thr Ile Phe Val Arg
      20             25             30

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Ser His Ala Gly Pro Leu
      35

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<210> 19

<211> 646

<212> DNA

<213> Triticum aestivum

<220>

<221> unsure

<222> (240)

<223> n = a, c, g, or t

<220>

<221> unsure

<222> (311)

<223> n = a, c, g, or t

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<221> unsure

<222> (337)

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<222> (354)

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<220>
<221> unsure
<222> (639)
<223> n = a, c, g, or t

<400> 19

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caactncaac aagtgtgtat cangttggcc caacactggt acaaccaatt taccgggcan 540
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<210> 20

<211> 39

<212> PRT

<213> Triticum aestivum

<400> 20

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Ser Asp Ala Ile Phe Arg Gln Ser His Ala Gly Leu Leu Asn Leu Cys
  1              5              10             15

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Ile Val Val Leu Ile Ala Val Asn Ser Arg Leu Ile Ile Glu Asn Leu
      20              25             30

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Met Lys Tyr Gly Leu Leu Ile
      35

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<210> 21

<211> 1975

<212> DNA

<213> Triticum aestivum

<220>

<221> unsure

<222> (93)

<223> n = a, c, g, or t

<400> 21

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cgaagataac acgacctgcc acatgtgttt tgtgtatacg tttcggttca tgtgccagca 1920
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<210> 22

<211> 508

<212> PRT

<213> Triticum aestivum

<400> 22

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Met Ser Lys Gly Asn Pro Asp Pro His Leu Pro Gly Ser Phe Leu Pro
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Ser His Gly Gly Pro Pro Pro Lys Pro Lys Thr Pro Pro Arg Thr Phe
                      20                      25                      30

Arg Asn Leu Pro Ser Ser Ser Thr His Gly Pro Ala Pro Ser Val Ala
  35                      40                      45

Ala Ala Thr Ile Ala Thr Thr Pro Pro Ser Ala Ser Ala Ala Pro Leu
  50                      55                      60

Pro Pro Thr Val His Gly Glu Ala Ala His Gly Ala Ala Ala Ala Ala
  65                      70                      75                      80

Arg Arg Asp Ala Leu Leu Pro Gly Val Gly Ala Ala His Arg Arg Val
                      85                      90                      95

Lys Glu Ser Pro Leu Ser Ser Asp Ala Ile Phe Arg Gln Ser His Ala
  100                      105                      110

Gly Leu Leu Asn Leu Cys Ile Val Val Leu Ile Ala Val Asn Ser Arg
  115                      120                      125

Leu Ile Ile Glu Asn Leu Met Lys Tyr Gly Leu Leu Ile Arg Ala Gly
  130                      135                      140

Phe Trp Phe Ser Ala Arg Ser Leu Gly Asp Trp Pro Leu Leu Met Cys
  145                      150                      155                      160

Cys Leu Thr Leu Pro Ile Phe Pro Leu Ala Ala Leu Met Thr Glu Lys
  165                      170                      175

Trp Ala Gln Arg Lys Leu Ile Arg Asp His Val Ser Ile Leu Leu His
  180                      185                      190

Ile Ile Ile Thr Thr Thr Val Leu Ile Tyr Pro Val Val Val Ile Leu
  195                      200                      205

Lys Cys Glu Ser Ala Val Leu Ser Gly Phe Val Leu Met Phe Ile Ala
  210                      215                      220

Ser Ile Thr Trp Leu Lys Leu Val Ser Phe Ala His Thr Asn Tyr Asp
  225                      230                      235                      240

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Ile	Arg	Ile	Leu	Ser	Gln	Ser	Ile	Glu	Lys	Gly	Ala	Thr	His	Gly	Ser		
				245					250					255			
Ser	Ile	Asp	Glu	Glu	Asn	Ile	Lys	Gly	Pro	Thr	Ile	Asn	Ser	Val	Val		
			260					265					270				
Tyr	Phe	Met	Leu	Ala	Pro	Thr	Leu	Cys	Tyr	Gln	Pro	Ser	Tyr	Pro	Arg		
		275					280					285					
Thr	Ala	Phe	Ile	Arg	Lys	Gly	Trp	Val	Thr	Arg	Gln	Leu	Ile	Lys	Cys		
	290					295					300						
Val	Val	Phe	Thr	Gly	Leu	Met	Gly	Phe	Ile	Ile	Glu	Gln	Tyr	Ile	Asn		
305					310					315					320		
Pro	Ile	Val	Gln	Asn	Ser	Lys	His	Pro	Leu	Asn	Gly	Asn	Phe	Leu	Asp		
				325					330					335			
Ala	Ile	Glu	Arg	Val	Leu	Lys	Leu	Ser	Val	Pro	Thr	Leu	Tyr	Val	Trp		
			340					345					350				
Leu	Cys	Met	Phe	Tyr	Ser	Phe	Phe	His	Leu	Trp	Leu	Asn	Ile	Leu	Ala		
		355					360					365					
Glu	Leu	Leu	Arg	Phe	Gly	Asp	Arg	Glu	Phe	Tyr	Lys	Asp	Trp	Trp	Asn		
	370					375					380						
Ala	Lys	Thr	Val	Glu	Glu	Tyr	Trp	Arg	Met	Trp	Asn	Met	Pro	Val	His		
385					390					395					400		
Lys	Trp	Ile	Val	Arg	His	Ile	Tyr	Phe	Pro	Cys	Ile	Arg	Asn	Gly	Leu		
			405						410					415			
Ser	Lys	Gly	Cys	Ala	Ile	Leu	Ile	Ala	Phe	Leu	Val	Ser	Ala	Val	Phe		
			420					425					430				
His	Glu	Leu	Cys	Ile	Ala	Val	Pro	Cys	His	Ile	Phe	Lys	Leu	Trp	Ala		
	435						440					445					
Phe	Ser	Gly	Ile	Met	Phe	Gln	Ile	Pro	Leu	Leu	Phe	Leu	Thr	Lys	Tyr		
	450					455					460						
Leu	Gln	Asp	Lys	Phe	Lys	Asn	Thr	Met	Val	Gly	Asn	Met	Ile	Phe	Trp		
465					470					475					480		
Phe	Phe	Phe	Ser	Ile	Val	Gly	Gln	Pro	Met	Cys	Val	Leu	Leu	Tyr	Tyr		
			485					490						495			
His	Asp	Val	Met	Asn	Arg	Gln	Ala	Gln	Thr	Asn	Gly						
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<210> 23

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:PCR primer

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20

<210> 24

<211> 33

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:PCR primer

<400> 24

tttctagact cgagtgaaca gttgtttcat gac

33

<210> 25

<211> 497

<212> PRT

<213> Mus musculus

<400> 25

Met Gly Asp Arg Gly Gly Ala Gly Ser Ser Arg Arg Arg Thr Gly Ser
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Arg Val Ser Val Gln Gly Gly Ser Gly Pro Lys Val Glu Glu Asp Glu
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Val Arg Asp Ala Ala Val Ser Pro Asp Leu Gly Ala Gly Gly Asp Ala
35 40 45

Pro Ala Pro Ala Pro Ala Pro Ala His Thr Arg Asp Lys Asp Gly Arg
50 55 60

Thr Ser Val Gly Asp Gly Tyr Trp Asp Leu Arg Cys His Arg Leu Gln
65 70 75 80

Asp Ser Leu Phe Ser Ser Asp Ser Gly Phe Ser Asn Tyr Arg Gly Ile
85 90 95

Leu Asn Trp Cys Val Val Met Leu Ile Leu Ser Asn Ala Arg Leu Phe
100 105 110

Leu Glu Asn Leu Ile Lys Tyr Gly Ile Leu Val Asp Pro Ile Gln Val
115 120 125

Val Ser Leu Phe Leu Lys Asp Pro Tyr Ser Trp Pro Ala Pro Cys Val
130 135 140

Ile Ile Ala Ser Asn Ile Phe Val Val Ala Ala Phe Gln Ile Glu Lys
145 150 155 160

Arg Leu Ala Val Gly Ala Leu Thr Glu Gln Met Gly Leu Leu Leu His
165 170 175

Val Val Asn Leu Ala Thr Ile Ile Cys Phe Pro Ala Ala Val Ala Leu
180 185 190

Leu Val Glu Ser Ile Thr Pro Val Gly Ser Val Phe Ala Leu Ala Ser
195 200 205

Tyr Ser Ile Met Phe Leu Lys Leu Tyr Ser Tyr Arg Asp Val Asn Leu
210 215 220

Trp Cys Arg Gln Arg Arg Val Lys Ala Lys Ala Val Ser Thr Gly Lys
 225 230 235 240
 Lys Val Ser Gly Ala Ala Ala Gln Gln Ala Val Ser Tyr Pro Asp Asn
 245 250 255
 Leu Thr Tyr Arg Asp Leu Tyr Tyr Phe Ile Phe Ala Pro Thr Leu Cys
 260 265 270
 Tyr Glu Leu Asn Phe Pro Arg Ser Pro Arg Ile Arg Lys Arg Phe Leu
 275 280 285
 Leu Arg Arg Val Leu Glu Met Leu Phe Phe Thr Gln Leu Gln Val Gly
 290 295 300
 Leu Ile Gln Gln Trp Met Val Pro Thr Ile His Asn Ser Met Lys Pro
 305 310 315 320
 Phe Lys Asp Met Asp Tyr Ser Arg Ile Ile Glu Arg Leu Leu Lys Leu
 325 330 335
 Ala Val Pro Asn His Leu Ile Trp Leu Ile Phe Phe Tyr Trp Phe Phe
 340 345 350
 His Ser Cys Leu Asn Ala Val Ala Glu Leu Leu Gln Phe Gly Asp Arg
 355 360 365
 Glu Phe Tyr Arg Asp Trp Trp Asn Ala Glu Ser Val Thr Tyr Phe Trp
 370 375 380
 Gln Asn Trp Asn Ile Pro Val His Lys Trp Cys Ile Arg His Phe Tyr
 385 390 395 400
 Lys Pro Met Leu Arg His Gly Ser Ser Lys Trp Val Ala Arg Thr Gly
 405 410 415
 Val Phe Leu Thr Ser Ala Phe Phe His Glu Tyr Leu Val Ser Val Pro
 420 425 430
 Leu Arg Met Phe Arg Leu Trp Ala Phe Thr Ala Met Met Ala Gln Val
 435 440 445
 Pro Leu Ala Trp Ile Val Gly Arg Phe Phe Gln Gly Asn Tyr Gly Asn
 450 455 460
 Ala Ala Val Trp Val Thr Leu Ile Ile Gly Gln Pro Val Ala Val Leu
 465 470 475 480
 Met Tyr Val His Asp Tyr Tyr Val Leu Asn Tyr Asp Ala Pro Val Gly
 485 490 495

Val

<210> 26

<211> 520

<212> PRT

<213> Arabidopsis thaliana

<400> 26

Met Ala Ile Leu Asp Ser Ala Gly Val Thr Thr Val Thr Glu Asn Gly
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Gly Gly Glu Phe Val Asp Leu Asp Arg Leu Arg Arg Arg Lys Ser Arg
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 Ser Asp Ser Ser Asn Gly Leu Leu Leu Ser Gly Ser Asp Asn Asn Ser
 35 40 45
 Pro Ser Asp Asp Val Gly Ala Pro Ala Asp Val Arg Asp Arg Ile Asp
 50 55 60
 Ser Val Val Asn Asp Asp Ala Gln Gly Thr Ala Asn Leu Ala Gly Asp
 65 70 75 80
 Asn Asn Gly Gly Gly Asp Asn Asn Gly Gly Gly Arg Gly Gly Gly Glu
 85 90 95
 Gly Arg Gly Asn Ala Asp Ala Thr Phe Thr Tyr Arg Pro Ser Val Pro
 100 105 110
 Ala His Arg Arg Ala Arg Glu Ser Pro Leu Ser Ser Asp Ala Ile Phe
 115 120 125
 Lys Gln Ser His Ala Gly Leu Phe Asn Leu Cys Val Val Val Leu Ile
 130 135 140
 Ala Val Asn Ser Arg Leu Ile Ile Glu Asn Leu Met Lys Tyr Gly Trp
 145 150 155 160
 Leu Ile Arg Thr Asp Phe Trp Phe Ser Ser Arg Ser Leu Arg Asp Trp
 165 170 175
 Pro Leu Phe Met Cys Cys Ile Ser Leu Ser Ile Phe Pro Leu Ala Ala
 180 185 190
 Phe Thr Val Glu Lys Leu Val Leu Gln Lys Tyr Ile Ser Glu Pro Val
 195 200 205
 Val Ile Phe Leu His Ile Ile Ile Thr Met Thr Glu Val Leu Tyr Pro
 210 215 220
 Val Tyr Val Thr Leu Arg Cys Asp Ser Ala Phe Leu Ser Gly Val Thr
 225 230 235 240
 Leu Met Leu Leu Thr Cys Ile Val Trp Leu Lys Leu Val Ser Tyr Ala
 245 250 255
 His Thr Ser Tyr Asp Ile Arg Ser Leu Ala Asn Ala Ala Asp Lys Ala
 260 265 270
 Asn Pro Glu Val Ser Tyr Tyr Val Ser Leu Lys Ser Leu Ala Tyr Phe
 275 280 285
 Met Val Ala Pro Thr Leu Cys Tyr Gln Pro Ser Tyr Pro Arg Ser Ala
 290 295 300
 Cys Ile Arg Lys Gly Trp Val Ala Arg Gln Phe Ala Lys Leu Val Ile
 305 310 315 320
 Phe Thr Gly Phe Met Gly Phe Ile Ile Glu Gln Tyr Ile Asn Pro Ile
 325 330 335

Val Arg Asn Ser Lys His Pro Leu Lys Gly Asp Leu Leu Tyr Ala Ile
 340 345 350
 Glu Arg Val Leu Lys Leu Ser Val Pro Asn Leu Tyr Val Trp Leu Cys
 355 360 365
 Met Phe Tyr Cys Phe Phe His Leu Trp Leu Asn Ile Leu Ala Glu Leu
 370 375 380
 Leu Cys Phe Gly Asp Arg Glu Phe Tyr Lys Asp Trp Trp Asn Ala Lys
 385 390 395 400
 Ser Val Gly Asp Tyr Trp Arg Met Trp Asn Met Pro Val His Lys Trp
 405 410 415
 Met Val Arg His Ile Tyr Phe Pro Cys Leu Arg Ser Lys Ile Pro Lys
 420 425 430
 Thr Leu Ala Ile Ile Ile Ala Phe Leu Val Ser Ala Val Phe His Glu
 435 440 445
 Leu Cys Ile Ala Val Pro Cys Arg Leu Phe Lys Leu Trp Ala Phe Leu
 450 455 460
 Gly Ile Met Phe Gln Val Pro Leu Val Phe Ile Thr Asn Tyr Leu Gln
 465 470 475 480
 Glu Arg Phe Gly Ser Thr Val Gly Asn Met Ile Phe Trp Phe Ile Phe
 485 490 495
 Cys Ile Phe Gly Gln Pro Met Cys Val Leu Leu Tyr Tyr His Asp Leu
 500 505 510
 Met Asn Arg Lys Gly Ser Met Ser
 515 520